Smart-AVI
SMART AUDIO VIDEO INNOVATION

Installation Manual

QuadKVM

Quadruple View KVM Switch

View four different analog/digital video sources simultaneously on one screen with USB keyboard and mouse support.

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Introduction

The QuadKVM Switch allows you to view up to four different analog and digital video sources simultaneously on one display device. It also supports keyboard and mouse functionality, allowing you to access all four displays with one set of interface controls. Connections to video sources are managed via DVI-I connectors. Advanced viewing options include dual-mode, quad-mode, full-screen mode, and PIP (picture in picture) mode. Use this device to simplify management of multiple sources by accessing and controlling them all through a single display and set of controls.

What's in the Box?

PART NO.	QTY	DESCRIPTION
SMQKVM	1	4-Port DVI, USB 1.1 KVM switch with PiP/Dual/Quad/Full modes.
PS5VDC4A	1	5VDC4A Power Supply

Features

- View up to four computers on a single monitor at the press of a button
- Supports USB keyboard and mouse
- On-screen display (OSD) makes setup and switching easy
- Change views by pressing the tact switches, keyboard hotkeys, and RS-232
- Display each computer with clean and crisp high-resolution video
- Supports DVI-D resolutions up to 1900 x 1200 @ 60 Hz
- Supports VGA resolutions up to 1600 x 1200 @ 60Hz
- Quad-mode splits the screen to show four computers on one screen
- Dual-mode splits the screen to show two computers on one screen
- PiP-mode displays one computer in full screen with three thumbnail views
- Control any one computer while monitoring three others
- User-defined frame rate for each input

QuadKVM Front

QuadKVM Rear

Technical Specifications

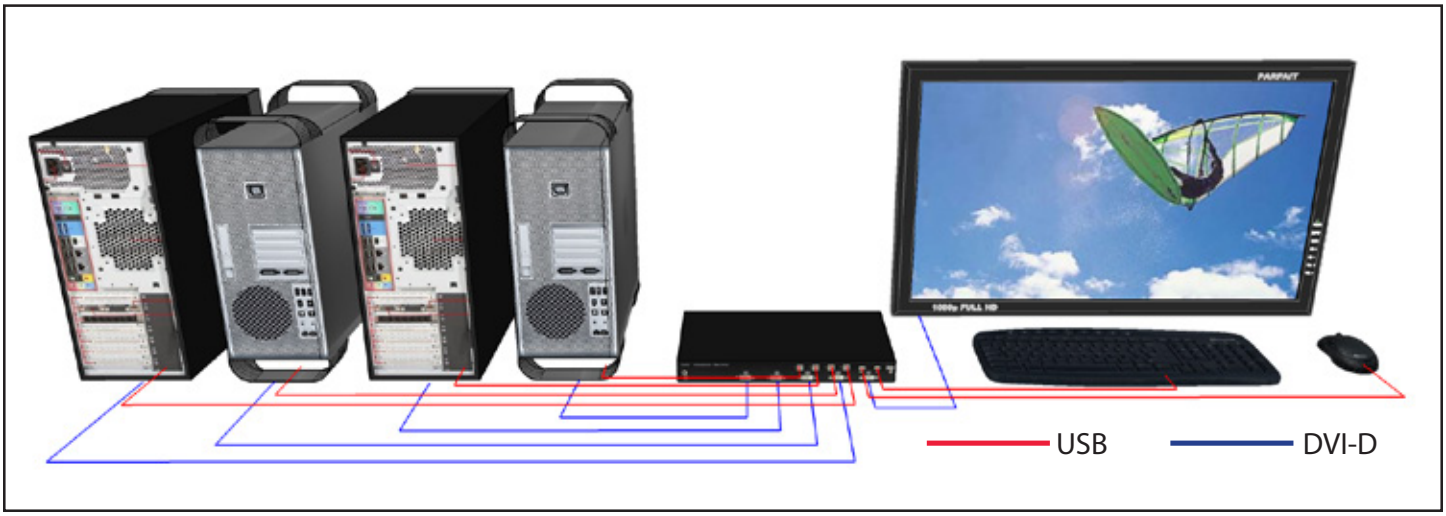
VIDEO	
Format	DVI-D Single Line
Maximum Pixel Clock	165 MHz
Input Interface	(4) DVI-D 29-pin female
Output Interface	(1) DVI-D 29-pin female
Resolution	DVI-D up to 1920 x 1200 @60Hz VGA up to 1600 x 1200 @60Hz
DDC	5 volts p-p(TTL)
Input Equalization	Automatic
Input Cable Length	Up to 20 ft.
Output Cable Length	Up to 20 ft.
USB	
Signal Type	USB 1.1 and 1.0
Input Interface (TX)	(4) USB Type B (Female)
Output Interface (RX)	(2) USB Type A (Female)
CONTROL	
Front Panel	Tact Switches
Keyboard	Hotkeys
RS-232	RS-232 Commands
OTHER	
Power	External 100-240 VAC/5VDC4A @20W
Dimensions	17”W x 1.75”H x 10.25”D
Weight	5 lbs.
Approvals	UL, CE, ROHS Compliant
Operating Temp.	32-131°F (0-55 °C)
Storage Temp.	-4-185 °F (-20-85 °C)
Humidity	Up to 95%

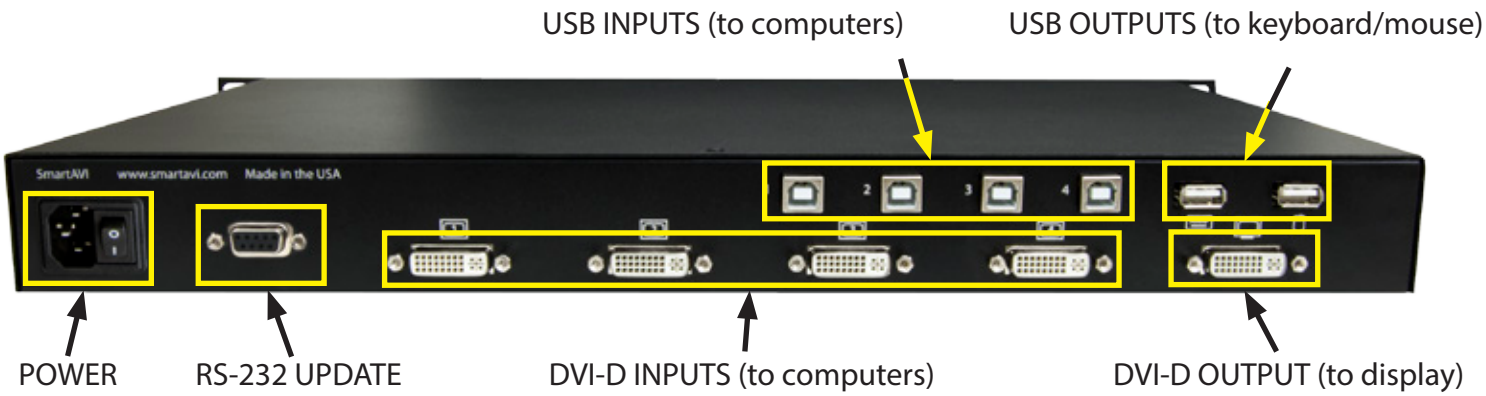
Applications

The QuadKVM can be used in many applications that require the real-time monitoring of multiple computers. It is a perfect solution in situations where a user needs to monitor several computers at the same time. In Air Traffic Control environments, several computers need to be monitored for the progress of flights and flight information. The QuadKVM is perfect for multi-tasking, allowing the user to run tasks on each computer and monitor their progress without having to switch back and forth between them.

- Corporate or Educational Presentations
- Financial (Remote Servers/User Control)
- Call Centers for Technical Support
- Industrial (Long-Range Workstation Isolation)
- Airport Installations (Air Traffic Control/Passenger Information)
- KVM Extension where Exceptional Quality of Signal is Crucial
- Medical (Remote Operation Away from Sensitive/Magnetic Equipment)
- Recording (for Large Studios where Editing/Mixing Stations are Compact and/or Require Complete Silence)

Installation





1. Power off all computers and the display.
2. Connect the USB output of each computer to the USB inputs on the QuadKVM using male to male A to B USB cables.
3. Connect the DVI-D output of each computer to the DVI-D inputs on the QuadKVM using male to male DVI-D cables.
4. Connect the USB keyboard and mouse to the USB outputs on the QuadKVM.
5. Connect the DVI-D display to the DVI-D output on the QuadKVM.
6. Power on the QuadKVM by connecting the power cable.
7. Power on the computers and the display.

Front Panel Operation

QuadKVM Front Panel
Buttons and Indicators

The QuadKVM operates in much the same way as a conventional KVM. To view and control any input, simply press the corresponding button on the front of the QuadKVM. For example, press 1 for the first input, 2 for the second input, and so on. The LED lights will change accordingly.

Setting the Resolution

The first time you connect a display to the QuadKVM, you will need to set the output resolution to that of your display. To change the resolution, press ***MENU and 2/3 at the SAME TIME***.

The corresponding resolutions are as follows:
Menu+2 - HDTV 1080p
Menu+3 - WUXGA 1920x1200

In addition to the standard KVM functions, the QuadKVM is capable of displaying several inputs at a time with different modes of operation. To switch to a particular mode, simply press the the corresponding button on the front of the QuadKVM. The available modes are defined as follows:

FullScreen Mode - *For Fullscreen Mode, press* ***FULL.*** To select the source computer for keyboard and mouse control, press ***1/2/3/4*** on the front panel.

PiP Mode - *For Picture-in-Picture Mode, press* ***PiP.*** To select the source computer for the main display and keyboard and mouse control, press ***1/2/3/4*** on the front panel.

Dual-Mode - *For Dual-Mode, press* ***PiP*** *and* ***FULL*** at the same time, then press ***1/2/3/4*** for the left source computer and ***1/2/3/4*** for the right source computer.

Quad-Mode - *For Quad-Mode, press* ***QUAD***. To select the source computer for keyboard and mouse control, press ***1/2/3/4*** on the front panel.

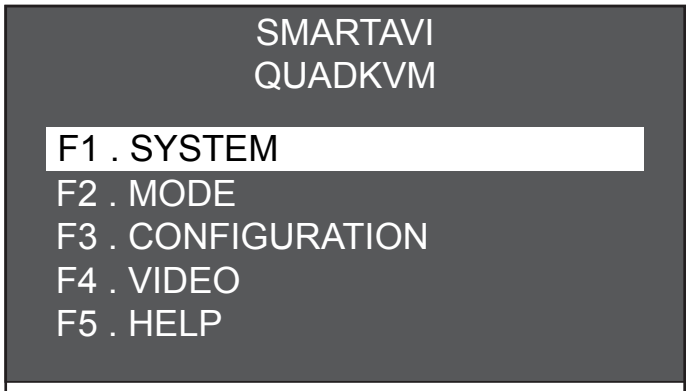
To display the system information, press ***MENU and PiP at the SAME TIME.*** To exit press ***MENU***.
To reset the QuadKVM to its factory default settings, press ***MENU, QUAD and FULL*** at the ***SAME TIME***.

On-Screen-Display (OSD) Operation

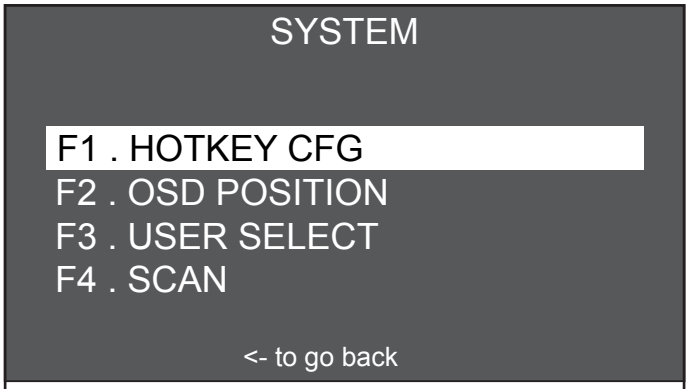
The QuadKVM has an OSD that is accessible by pressing ***MENU*** on the front panel.
To select an option:

- press ***1/2/3/4*** on the front panel (1-4 only)
- use the keyboard up and down arrow keys, pressing enter to select, left arrow to go back.
- press the corresponding F-key

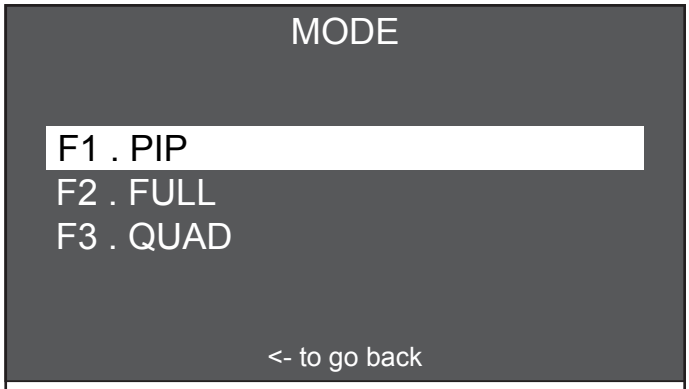
To exit the OSD, press ***MENU*** or escape.



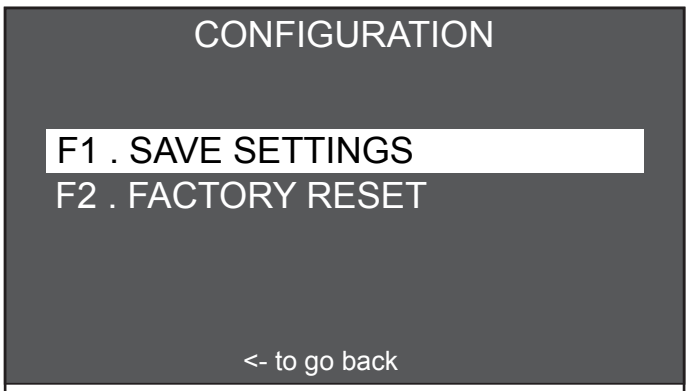
Screenshot of the QuadKVM's Main OSD.



The SYSTEM OSD option (F1 from the main OSD) allows the user to configure the hotkeys (F1), change the OSD position (F2), select from set users (F3), and scan the inputs 1-4 once (F4).



The MODE OSD option (F2 from the main OSD) allows the user to set the mode. The available modes via OSD are PiP (Picture in Picture) (F1), Full (F2), and Quad (F3).



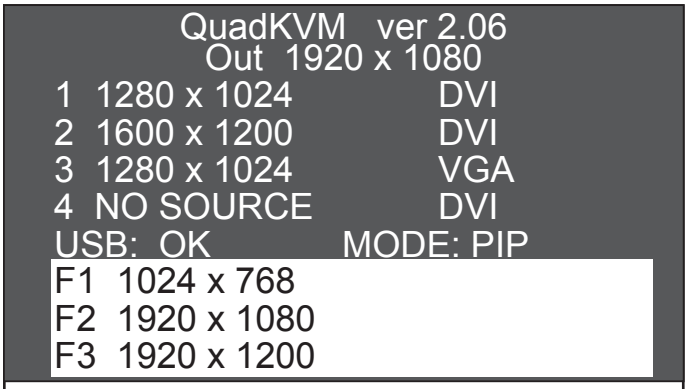
The CONFIGURATION OSD option (F3 from the main OSD) allows the user to back up the settings (including pre-defined user settings) (F1) and to perform a factory reset to reset the QuadKVM to its factory default settings (F2).

The VIDEO CONFIG OSD option allows the user to view the video status (F1), select the output resolution (F2), and set the horizontal (F3) and vertical (F4) positon of the video output..

Keyboard Hot-Key Operation

The QuadKVM can be controlled via keyboard hot-keys that make the functions of the QuadKVM available at the console keyboard. The hot-keys are programmable via the OSD menus. By default, the primary ***HotKey*** is ***Ctrl.*** The default hotkey can be changed in the SYSTEM OSD (see On-Screen-Display (OSD) Operation).

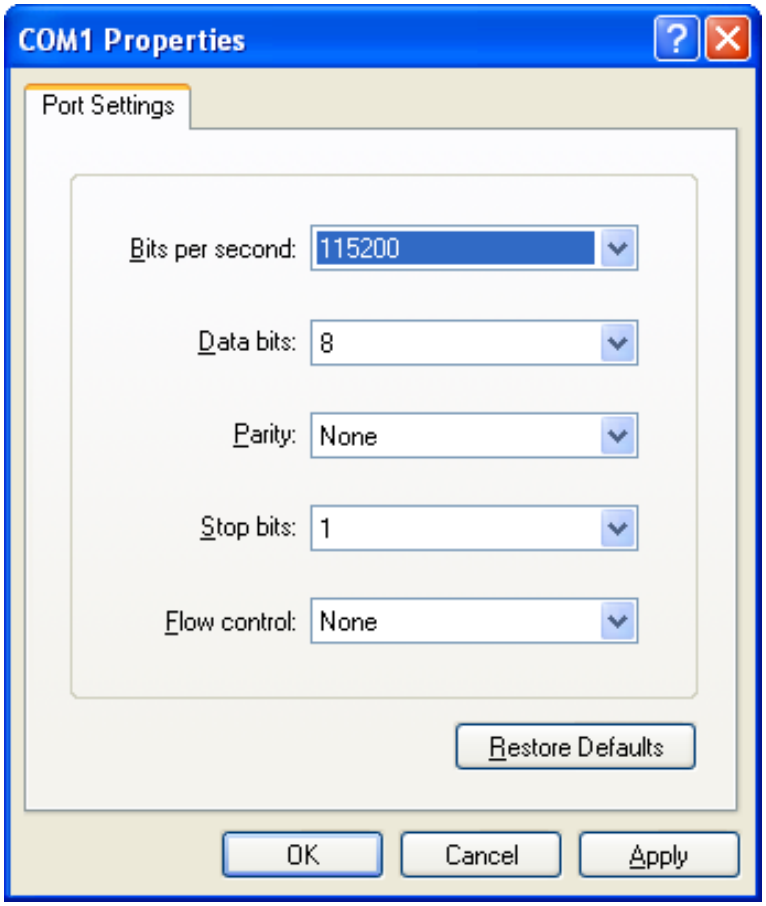
HOTKEY SEQUENCE	FUNCTION
HotKey, HotKey, O	Brings up the On Screen Display (See OSD Operation).
HotKey, HotKey, I	Displays an informational status screen. See below.
HotKey, HotKey, Q	Selects Quad Mode.
HotKey, HotKey, U,1/2/3/4	Selects source for control. Use ***1/2/3/4*** to select the source computer for display, keyboard and mouse control.
HotKey, HotKey, F,1/2/3/4	Selects Full Mode. Use ***1/2/3/4*** to select the source computer for display, keyboard and mouse control.
HotKey, HotKey, P,1/2/3/4	Selects PiP Mode. Use ***1/2/3/4*** to select the source computer for display, keyboard and mouse control for the main screen.
HotKey, HotKey,D, ***(***right***)1/2/3/4/,(***left***)1/2/3/4***	Selects Dual Mode. Use ***1/2/3/4*** to select the LEFT source computer for display, and ***1/2/3/4*** to select the RIGHT source computer for display.
HotKey, HotKey, V,1/2/3	Changes the output resolution. ***1*** - XGA 1024x768 ***2*** - HDTV 1080p **3** - WUXGA 1920x1200
HotKey, HotKey, R	Resets the USB board. Use if a source computer's USB is un-plugged during use. This resets control to the first available source. Alternately, you can use ***HotKey, HotKey, U,1/2/3/4 .***
HotKey, HotKey, B	Resets the QuadKVM to factory defaults.



HotKey, HotKey, I displays an informational status screen like the one shown above. Press ***F1/F2/F3*** to change the output resolution.

RS-232 Operation

The QuadKVM may also be controlled via RS-232 commands. To use these commands, you must use HyperTerminal or an alternate terminal application. The settings for the connection are as follows:



Once you have connected to the QuadKVM, you will see resolution information for the connected sources and a command prompt.

The screen should look similar to the following:

```
The resolution read for input  1 is SXGA   1280x1024
The resolution read for input  2 is UXGA   1600x1200
The resolution read for input  3 is SXGA   1280x1024
There is an invalid source on input port. 4
QuadView Apr 20 2012 09:48:10 ver#2.06>>_
```

RS-232 Operation (continued)

Once you have entered the correct password, the following commands may be issued:

Help and a list of options	?<enter>
Information	i<enter>
Dual Mode	d<space>[LEFT 1-4]<space>[RIGHT 1-4]<enter>
Full-Screen	f<enter>
Quad-Mode	q<enter>
PiP-Mode	p<space>[1-4]<enter>
Output Resolution	o<space>[0-XGA|1-HD|2-WUXGA]<enter>
Set the EDID	E<space> [1-WUXGA|2-VGA|3-HD](for 1)<space> [1-WUXGA|2-VGA|3-HD](for 2)<space> [1-WUXGA|2-VGA|3-HD](for 3)<space> [1-WUXGA|2-VGA|3-HD](for 4)<space><enter>
Reset the QuadKVM	reset<enter>
Upload Firmware	u1<enter>
USB Bootload Mode	u2<enter>
Reset USB Board	ru<enter>

The following is an example screen shot of the QuadKVM help/options screen (this screen was displayed by pressing ?<enter>):

```
q  Quad view   q
p  PiP  p [Main Screen]<1-4>
o  Output Mode o [0-XGA|1-HD|2-WUXGA]
S  Run scan of input ports.
u1  Upload new firmware to the USB board
reset Reset the QuadView.
ru Reset the USB board.
E  EDID E[INPUT PORT][1-WUXGA][2-VGA][3-HD].
u2 Put the USB ports in bootload mode
?   Help ?
```

To display the port information, press i<enter>. The following screen will look something like this:

```
Port   source   mode    res
=========================================
 1      DVI      SXGA   1280x1024
 2      DVI      UXGA   1600x1200
 3      VGA      SXGA   1280x1024
 4

Current Output: HD 1920x1080

Current Mode: QUAD VIEW
```

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